

ON THE AUSTRALIAN SPECIES OF COON BUGS

(*Oxycarenus* Fieber, Heteroptera-Lygaeidae)

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Plate xli

SYNOPSIS

The three Australian species of *Oxycarenus* are described, and figured, and differentiated. Their status is discussed and it is concluded the three species concerned are *O. luctuosus* (Mont. and Sign.), *O. arctatus* (Walker), and a variety of *O. bicolor* (Fieber).

INTRODUCTION

Every Australian entomologist is familiar with the small black and white Lygaeids of this genus. They often swarm in great numbers, when all stages from the earliest nymphs to single and pairing adults are present at the one time as large and fairly localized swarms in grassy paddocks and savannah areas. This curious swarming phenomenon is also found over much the same range in the south of Australia in the Pyrrhocorid *Dindymus versicolor* Schaeffer and in the southern part of the dry centre of the continent by the Coreid *Leptocoris mitellatus* Bergroth.

The name "coon bug" first appears in the literature for the Australian members of the genus in Froggatt 1901. It was in this paper that Froggatt fixed the name that almost without exception has since been used for all Australian *Oxycarenus*, namely *luctuosus* (Montrouzier and Signoret) and he figured what he thought was this species. Froggatt made it quite clear that he was aware that there were at least two species in Australia (something that Tillyard 1926 p. 147 was unaware of) and that the northern one was *luctuosus*. In spite of this he figured and described as *luctuosus* in this very same paper the species that is commonest in the southern half of the continent and does not occur in the northern half at all. What is more incomprehensible still, there are specimens of this southern

species labelled *O. frenchi* in the National Museum collections in Froggatt's handwriting. *O. frenchi* is apparently a Froggatt manuscript name; I can find no record of its publication.

There are actually three species of *Oxycarenus* in Australia recorded in the literature, but one of these, considered to be a form of the Asiatic *Oxycarenus bicolor* and possibly first recorded from Australia by Bergroth in 1918 seems to be rather uncommon and from the few specimens I have seen is restricted to the far north of the continent. It is easily distinguished from the other two in that in our specimens, except for a narrow costal stripe on the hemielytra, it has no white on the upper side and need not concern us for the moment in the following discussion on the status of *luctuosus*.

The original type of *luctuosus* seems almost certainly to be lost, the species was described from New Caledonia. In 1914 Distant figured (from New Caledonian specimens) what he took to be *luctuosus* and it is this species that is the only one of our prominently white marked species that occurs in the northern half of the continent.

The insect Distant figured was described by Kirkaldy in 1905 as a new species (*lifuanus*) and it seems likely that Kirkaldy was guided in this by Froggatt's figure. Kirkaldy says, "This may be *Macroplox luctuosus* Montr., but that species is described as finely *granulated*, with the clavus *whitish* "(my italics)" and the membrane brown. It is also a little larger than *O. lifuanus*." This white clavus is not mentioned in Montrouzier and Signoret's original description which is "Long. 4 mill.—Lifu (1) Petit, noir; partie coriace des homélytres blanche, avec une tache noire, arrondi au milieu; partie membraneuse rembrunie; tête très pointue, finement granuleuse, ainsi que le corselet."

In view of the solely southern distribution of the species that Froggatt figures and the apparent commonness of the species that Distant figured in New Calendonia there can be little doubt that Distant's figure is of the true *luctuosus* Montrouzier and Signoret and that this is our common northern *Oxycarenus*.

In 1872 Walker described *Anthocoris arctatus* from Australia and in 1901 Distant pointed out that this was actually a species of *Oxycarenus*. Specimens of the species figured by Froggatt have been sent to the British Museum for comparison with this species and Mr. R. J. Izzard, who compared the specimens, is in no doubt that it is in fact *Oxycarenus arctatus* (Walker).

The three species may be separated by the following key:—

1. The only white above being along the costal margin of the corium *Oxycarenum bicolor*
Fieber var.
- Coriaceous part of hemelytra with considerable white 2
2. Clavus black, corium with a large median black patch generally not reaching costal margin and a minute black point in the apical angles *Oxycarenum luctuosum*
Montrouzier and Signoret
- Clavus white, except behind tip of scutellum, corium with a large median black patch never reaching costal margin and a large black point in the apical angles *Oxycarenum arctatum*
(Walk.)

***Oxycarenum bicolor* Fieber 1851**

Oxycarenum bicolor Fieber 1851: Abh. König. Böhm. Gesell. Wissenschaft VII Prag: 463. Distant, 1903: Faun. Brit. Ind. Rhynch., 2: 44. Bergroth, 1918: Phillip. J. Sci., 13 (2-3): 73. Horvath, 1926: Bull. Soc. Ent. Fr., 136. Esaki, 1926: Ann. Mus. nat. hung., 24: 161. 1941: Proc. 6th Pacif. Sci. Congr., 4: 411. Usinger, 1946: Bull. Bernice P. Bishop Mus., 189: 29. Barber, 1958: B. P. Bishop Mus. Insect of Micronesia, 7 (7): 191.

Fieber described his species as follows, a copy of which was most kindly sent me by Mr. Izzard:—"O. bicolor, m. Fühler schwarz. Clavus bräunlich. Corium schwarz, Grundhälfte weiss, Wurzel bräunlich, Spitze dreieckig weiss, mit schwarzem Endpunkt. Membran rauchbraun, Innengrundwinkel mit dreieckigem weissem Fleck, Spitze weisslich. Aus Hinterindien von Dr. Helfer gesammelt. Länge 1½ Linien. Kopf, Pronotum, Schild weiss behaart, nebst Fühler und Schnabelscheide schwarz, Clavus bräunlich. Bauch schwarz, glatt glänzend. Brust schwarz, matt, grob-punktiert. Hinterbrust und Ecken weiss. Schenkel pechbraun, Schienbeine weisslich, am Grunde mit schwarzen Ringe, am Ende breit verwaschen und die Vorder-schienen braun."

Bergroth 1918 records typical *O. bicolor* from various places in Australia but I am inclined to think Bergroth actually had *luctuosum*

which fits Fieber's description very well except that it has a pale transparent membrane. Bergroth could have taken *arctatus* as being *luctuosus* on account of Froggatt's figure. Also if typical *bicolor* is as common in Australia as Bergroth says it is it should be in some of the collections before me.

The species I have before me is apparently widespread in Indonesia, Micronesia, Philippines, New Guinea and enters Australia in the Torres Strait area. Its identity has been accepted by all the authors after Distant and Bergroth listed in the reference above as *O. bicolor* Fieber. There is still some doubt on this score. My three specimens do not fit the description given by Fieber for his species (which came from "Hinterindien" which I take to mean Eastern India but which could also refer to Burma or Indo-China) in certain respects of colour pattern.

The three specimens I have before me are piceous black with sparse short erect white hairs all over and in addition with fairly dense adpressed hairs on head, pronotum, and prothorax. The clavus is not as piceous as the rest of the body and the corium in the main and the membrane is dark brown as are the tibiae, tarsi, and eyes. The corium has a broad costal white stripe running almost all of its length (the very apical angle is blackish) and this stripe is expanded basally and apically. The membrane is thinly margined with white and ventrally there is a broad medial white stripe on the hind tibiae and to hind margin of the metapleuron (broadly) and also the fore and mid acetabula are white. The head and pronotum are coarsely punctate. They range in length from 3.5-4.0 mm.

Mr. Izzard who has seen two of these specimens has compared them with Distant's specimen of *bicolor* from Burma. This specimen apparently agrees very well with Fieber's description and from it my specimens differ in not having "the white basal areas of corium, nor the triangular white patch at the apex with the small black point". Structurally my specimens agree with Distant's conception of *O. bicolor*.

Usinger 1946 mentions a whole series of variants which he places in this species. His Papuan specimens have the costal margins pale as do my specimens. His Peleliu specimens were smaller than the Guam specimens with pale at bases and apices of coria and apical margin of membrane faintly paler. The Guam series was very black, completely so beneath, with only the bases and subapices of coria white.

Bergroth 1918 apparently had this species in front of him from the Philippines but he is definite that it is *lugubris* Motschulsky (1859: *Etud. Ent.*, 8: 108 as *Stenogaster lugubris*, also Distant, 1901: *Ann. Mag. Nat. Hist.* (7) 8: 475. 1903: *Faun. Brit. Ind. Rhynch.*, 2: 44) and it certainly does fit the description of *lugubris* better than that of *bicolor*. Distant 1903 was of the opinion that *Rhopalus* ? *funeralis* Kirby (1891: *J. Linn. Soc. Zool.*, 24: 97 pl. IV p. 7) is a synonym of *lugubris* and Bergroth that *O. limbaticipennis* Breddin (1899: *Jahr. Hamburg Wiss. Arstatt* 16: 174) from Lombok is one also.

There is quite sufficient reason, I think, to consider for the moment all of these forms as belonging to one species in which the costal margin tends to become whiter towards the New Guinea and Indonesian limits of its distribution, while the Guam specimens represent a blackish phase. Certainly the picture will not be clearer until much better series of specimens are obtained. For the moment Esaki and Usinger's determination of the species as *bicolor* has been permitted to stand. Usinger seemed somewhat inclined to regard *lugubris* as a variant of *bicolor* but Izzard (*in litt.*) is of the opinion they are distinct.

Specimens seen: Mabuiag I., Torres Straits, Queensland, C. T. McNamara, 1♂, and Bisiatabu, Port Moresby, Papua, W. N. Lock, 1♂, 1♀ (S.A.M.).

***Oxycarenum arctatus* (Walker) 1872**

Plate xli, fig. C

Anthocoris arctatus Walker, 1872: *Cat. Heter.*, 5: 153.

Oxycarenum arctatus Distant, 1901: *Ann. Mag. Nat. Hist.*, (7) 8: 475. Gross, 1957: *Rec. S. Aust. Mus.*, 13 (1): 137.

Cardiastethus arctatus Gross, 1954: *Rec. S. Aust. Mus.*, 11 (2): 133.

Oxycarenum luctuosus Froggatt (in part) 1901: *Agric. Gazette N.S.W.* Misc. Publ. 538 (fig. 6 and only part of text on p. 8).

Piceous or dark brownish black, with a few scattered short stiff erect white hairs. Clavus white except broadly along apical margin where it is black. Corium largely white with extreme apex black and a large irregularly shaped blackish spot in the middle, this latter is based on apical margin of corium and occupies it from apex of clavus to half way to apical black spot, this median large spot transversely placed but not reaching costal margin. Membrane hyaline. Fore

and mid acetabula and hind margin of metapleuron (broadly) white. All tibiae and tarsi lighter, mid and hind tibiae with a prominent broad white annulus in the middle. Eyes brownish. Head and pronotum prominently punctate, scutellum rather less punctate.

Length: 3.2-4.6 mm.

Localities:

Western Australia: 33-363/5 Tunney 2 ♂♂, 1 ♀ (W.A.M.).

South Australia: Underdale, 5 I 1958, coll. G. F. Gross, a large series: North Adelaide 19 II 1953, coll. G. F. Gross, Reg. No. 722, 1 ♀: ditto, 15 I 1953, 2 ♂♂, 3 ♀♀, Reg. No. E.S.I. 330; ditto, 23 XI 1954, 3 ♂♂, 2 ♀♀, Reg. No. E.S.I. 3687; Adelaide 2 I 1898, coll. J. G. O. Tepper, 1 ♂: Parachilna (this locality is doubtful it could also be from Owanigan Pound some miles to the east), 1 ♂: Spilsby I., N. B. Tindale, a series (S.A.M.).

Victoria: Murtoa, 29 VIII 1904, coll. T. A. Hill, on fence, large series: South Yarra, VI 1923, a series: Melbourne, 3 ♂♂, 3 ♀♀; Buckrabanyule, 20 II 1950, coll. H. Ennis, 2 ♂♂, 4 ♀♀ (N.M.).

***Oxycarenum luctuosus* (Montrouzier & Signoret) 1861**

Plate xli, fig. B

Macroplax luctuosus Montrouzier & Signoret, 1861: Ann. Soc. ent. Fr. (4) 1: 67.

Oxycarenum luctuosus Froggatt, 1901: Agric. Gazette N.S.W., Misc. Publ. 538: (text, but not fig. 6). Distant, 1914: Nov. Caledon. Zool., 1, pl. 12, p. 8. 1920: Ann. Mag. Nat. Hist. (9) 6: 153. Tillyard, 1926: Insects of Australia and New Zealand: 147. McKeown, 1945: Australian Insects: 81 (the last two apply also to *arctatus*).

Oxycarenum lifuanus Kirkaldy, 1905: Trans. ent. Soc. Lond.: 347, 1908: Proc. Linn. Soc. N.S.W., 32: 773.

Piceous black, with sparse short erect stiff hairs. Clavus entirely black. Corium white with a large median blackish spot in the same position and of much the same shape as in *arctatus*, but often reaching costal margin, apex of corium with a small black spot. Membrane hyaline.

* The following abbreviations of institutions have been used. N.M. (National Museum, Melbourne); S.A.M. (South Australian Museum, Adelaide); U.Q. (Entomology Department, University of Queensland, Brisbane); and W.A.M. (Western Australian Museum, Perth).

All tibiae and tarsi somewhat lighter in colour, hind tibiae with a broad medial white ring, mid tibiae with a narrower testaceous one. Fore and mid acetabula and hind margin of mesosternum (broadly), white. Margin of orifice of scent canal orange or whitish.

Head and pronotum coarsely punctate, scutellum fairly smooth.

Length: 3.2-3.9 mm.

Localities:

Southern South Australia: Medindie, 9 III 1958, coll. E. W. Lines, a series: Underdale, II 1959, coll. G. F. Gross, 1 ♀ (S.A.M.).

Northern South Australia: Moolooloo, 2,000ft. Flinders Ranges, 1921, coll. H. M. Hale, 1 ♀ (S.A.M.).

New South Wales: Tweed Heads, 16 VII 1958, coll. Coghill, a series (N.M.).

Queensland: Brisbane, 25 VI 1954, coll. K. L. S. Harley, 1 ♂, 1 ♀: ditto, III 1951, coll. Lipsett, 1 ♀: ditto, IV 1955, coll. N. J. Thompson, 1 ♂: ditto, 7 VII 1955, coll. D. Griffith, 1 ♂: ditto, 15 III 1956, coll. W. Jones, 1 ♀: ditto, 26 IX 1956, coll. I. Bonner, 1 ♂: ditto, 14 X 1956, coll. T. A. Bull, 2 ♀ ♀: ditto, 17 X 1956, coll. R. White, 1 ♀: ditto, X 1956, coll. J. O'Donohue, 1 ♂: ditto, 13 III 1957, coll. S. Sekhon, 1 ♂, 2 ♀ ♀: ditto, 24 V 1957, coll. G. Diatloff, 1 ♂, 1 ♀: ditto, 24 VIII 1957, coll. G. Eppershank, 1 ♂: ditto, 14 IX 1957, coll. B. R. Grant, 1 ♂: ditto, 20 X 1957, coll. M. Playne, 1 ♀: Bell-Bunga Road, S.E. Qld., 11 VIII 1955, coll. T. E. Woodward, a series: Lawes, 4 IV 1944, coll. J. Rosser, 1 ♀: ditto, XII 1954, coll. J. Thapa, 1 ♀: Carnarvon, 29 V 1954, coll. T. E. Woodward, 1 ♀: Victoria Pt., 11 IX 1954, coll. O. R. Byrne, 1 ♀: Bundamba, 17 VIII 1952, coll. J. Davis, 1 ♂: Gaythorne, 18 IV 1946, coll. A. R. Bird, a series: Manly, 18 III 1954, coll. G. Hooper, 1 ♂: Deception Bay, 25 III 1954, coll. Y. P. Beri, 1 ♂: St. George, West Qld., in peach tree, 12 I 1956, 2 ♀ ♀: Approx. 40 miles N. of Gympie, 20 VII 1952, 1 ♀: Bundaberg, 2 II 1949, coll. R. Boller, 2 ♀ ♀: Rockhampton, 10 I 1954, coll. K. S. Chang, 2 ♀ ♀: Canungra, 27 III 1937, coll. R. F. Langdon, 2 ♀ ♀: Lockhart R. Mission, Nth Qld., 8 VI 1956, coll. E. N. Marks, by sweeping grass and weeds, 3 ♂ ♂ (U.Q.); Magnetic Island, coll. G. F. Hill, a series: ditto, coll. A. M. Lea, a series: Rockhampton, 1 ♂, 1 ♀: Stuart R., I-II 1927, coll. H. M. Hale & N. B. Tindale, 1 ♂, 1 ♀ 1 ? (S.A.M.): Coen, 27 V 1951, coll. C. Oke, 1 ♀ (N.M.).

Northern Territory: Roper River, coll. N. B. Tindale, a series: Darwin, 1♂, 1♀ 2 nymphs (S.A.M.): Batchelor, coll. G. F. Hill, presented 6 VI 1917, 2♀♀ 1 nymph (N.M.).

North Western Australia: coll. Lea, No. 6362, 1♀ (N.M.). Millstream, in flowers of yellow hibiscus, 17 VII 1958, and Millstream, Deep Reach, 23 VII 1958, all coll. R. P. McMillan, a series (W.A.M.).

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